

Summary of Cancer Incidence and Mortality for Union County, SC

Cancer Incidence in Union County

The first step in the analysis of cancer data for this county was to look at the number of new cancer cases diagnosed in the county and compare this to the number of cancer cases expected in this county (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of each county.

Table 1 shows what types of cancer were diagnosed in Union County from 1996-2000, and how many cancer cases were expected. Overall, there was a fewer number of cases of cancer than expected in Union County. The most common types of cancer in this county were lung, female breast, colon/rectum and prostate cancers. These types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis also revealed one specific type of cancer (**Larynx**) where the number of cases was significantly higher than expected. The main risk factor for laryngeal cancer is tobacco use. The risk of cancer is 5 to 35 times greater for smokers than nonsmokers. Also, heavy drinkers have a risk 2 to 5 times higher than nondrinkers. If a person both uses tobacco and drinks, the risk increases even more. Other risk factors include having gastroesophageal reflux and breathing wood dust, paint fumes, or asbestos.

Cancer Deaths in Union County

To assess cancer deaths in Union County, cancer mortality data from 1998-2002 were used. The process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred in Union County and the number expected. Overall, the number of cancer deaths that occurred was higher than expected in Cherokee County; however this excess was not statistically significant.

The analysis revealed one specific type of cancer (**Bladder**) where the number of deaths was significantly higher than expected. The risk of bladder cancer increases with age, and whites are two times more likely to develop bladder cancer than are African-Americans. Smoking is the greatest risk factor for bladder cancer. Smokers are more than twice as likely to get bladder cancer as nonsmokers. Another risk factor for bladder cancer is chronic bladder inflammation, such as from urinary infections or kidney stones. Also, exposure to certain industrial chemicals can increase the risk of bladder cancer. The industries that carry the highest risk include the makers of rubber, leather, textile, and paint products as well as printing companies. Cases of bladder cancer were about what is expected. Therefore, a higher number of deaths suggests late stage diagnoses of these cancers.

Conclusions

To summarize, overall there was a fewer number of cancer cases occurring in Union County than expected. Laryngeal cancer had a significantly higher number of cancer cases than expected in Union County. The number of Bladder cancer deaths was higher than expected. The risk factors for both these cancers are primarily lifestyle related, the strongest being tobacco use. Other risk factors include some occupational and industrial chemical exposures. Another fact to note is that while 19 cases of larynx cancer were diagnosed only 2 deaths occurred. This may be indicative of laryngeal cases being diagnosed in early stages of disease which is encouraging. On the other hand, the number of bladder cancers was not high for new cases diagnosed but was for deaths. This could be indicative of more advanced staged bladder cancers at diagnosis.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or prostate cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, the South Carolina Central Cancer Registry determined there is no evidence of cancer clustering in Union County.

For questions about this report, please contact Susan Bolick-Aldrich, MSPH, Director of the South Carolina Central Cancer Registry.

Report provided by:

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Table 1. Analysis of New Cancer Cases in Union County, 1996-2000

Site	Observed	Expected	Observed/Expected	Chi-Square Test*
Lung/Bronchus	129	124.27	1.04	0.18
Breast (Female)	111	114.81	0.97	0.13
Colon/Rectum	103	90.60	1.14	1.70
Prostate	86	125.47	0.69	12.41
Bladder	32	31.34	1.02	0.01
Non-Hodgkin Lymphoma	27	25.12	1.08	0.14
Kidney/Renal Pelvis	26	19.36	1.34	2.28
Oral/Pharynx	20	21.70	0.92	0.13
Melanoma	19	25.02	0.76	1.45
Larynx	19	9.49	2.00	9.52
Ovary	17	12.86	1.32	1.33
Brain/CNS	14	10.04	1.39	1.56
Pancreas	13	17.80	0.73	1.30
Uterus	12	19.27	0.62	2.74
Esophagus	11	10.61	1.04	0.01
Cervix	10	9.96	1.00	0.00
Leukemia	8	14.74	0.54	3.08
Stomach	6	12.44	0.48	3.33
Liver	6	5.48	1.10	0.05
Multiple Myeloma	5	8.86	0.56	1.68
Thyroid	2	7.34	0.27	3.89
Unknown/III-Defined	17	NA	NA	NA
All Sites	735	772.91	0.95	1.86

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201

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Table 2. Analysis of Cancer Deaths in Union County, 1998-2002

CancerSite	Observed	Expected	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	122	108.91	1.12	1.57
Colon/Rectum	41	36.77	1.12	0.49
Female Breast	34	27.22	1.25	1.69
Unknown/III-Defined	30	22.58	1.33	2.44
Prostate	15	24.86	0.60	3.91
Pancreas	15	20.59	0.73	1.52
Bladder	15	7.16	2.10	8.59
Non-Hodgkins Disease	14	13.40	1.05	0.03
Leukemia	13	12.95	1.00	0.00
Esophagus	12	8.94	1.34	1.05
Multiple Myeloma	11	8.69	1.27	0.61
Brain/CNS	10	8.99	1.11	0.11
Kidney/Renal Pelvis	10	7.52	1.33	0.82
Liver	8	7.08	1.13	0.12
Oral/Pharynx	7	6.86	1.02	0.00
Stomach	4	9.30	0.43	3.02
Ovary	4	8.72	0.46	2.55
All Sites	397	370.13	1.07	1.95

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

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